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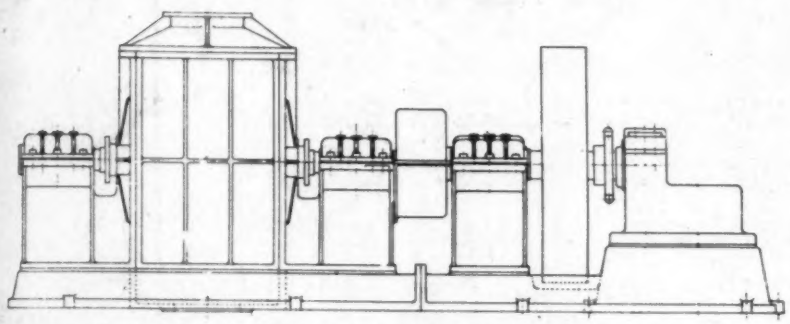

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21-G	495 M	450 M	275 M
23-G	580 M	550 M	300 M
25-G	760 M	700 M	400 M
27-G	940 M	850 M	500 M
31-G	1250 M	1150 M	600 M
33-G	1335 M	1230 M	750 M
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Reduction in Price of Gas to the Consumer a Way to Prosperity for the Gas Industry

Not Necessary that the Reduction Be in the Terms of Dollars, but that It Be Kept So Cheap Relatively that It Is Not Only Competitive Against All Other Producers of Heat and Energy, but Preferable in the Point of Use

By L. W. ALWYN-SCHMIDT

New importance has come to the gas companies of this country as a source of higher national efficiency, an economizer of coal and the producer of important basic materials. Each of these three would make the fortune of any industry. The three combined should carry the gas industry to the peak of its usefulness.

But to reach this point of ultimate destiny it is necessary that the gas industry itself should understand the importance of the present period. Our gas men should aid in its development and guide the industry to the most direct way to its accomplishment.

We must spread the consumption of gas, because by doing so we enable the American nation to operate its industry more efficiently than before, because we make possible the conservation of great quantities of coal, reducing in this way the cost of the principal source of power and heat, because every unit of gas that is sold is a source of much needed industrial materials which come to the gas industry as a by-product.

There are two ways to increase the sale of any commodity. By creating a wider demand or by a reduction of the cost. It seems that the gas industry has done everything it can to expand the demand for gas. It has been argued in fact that with the present price scale for gas we cannot expect a future natural increase in the demand for gas. The alternative, therefore, is a reduction in the cost of gas to the consumer.

Creating a Source of National Wealth

Such words as cost and price always are of a comparative meaning. An article that cost $3 five years ago, and may have been expensive at that price, certainly will be cheap to-day if it can be purchased for $4. So it is not necessary that the efforts of the gas industry should be centered upon an actual reduction of the present price of gas as expressed in dollars and cents, but to keep the cost of gas so low as to make it not only competitive against all the other producers of heat and energy but to make even preferable its use in competition with the others.

It is necessary that the price of gas should be so low as to permit its introduction into the processes of manufacturing or domestic life where at present neither gas nor electricity nor steam can be used, so as to open new employments for the application of coal energy. This in the economic sense will not only widen the efficiency of the gas industry, but it will also create a powerful source of national wealth, the extent of which cannot be estimated without knowing the possibilities of such an occurence.

Times Favorable for Reorganization of Industry

It seems paradoxical to say that the conditions are now more than favorable for such a development.

This, however, is nevertheless the case.

Periods with heavily fluctuating values demand more than ever the existence of a stabilizing influence like that which can be provided by the public utility.

If manufacturers and other heat consumers can rely upon a steady flow of this vital necessity at a reasonable cost they will be only too glad to give it every chance.

This being the condition of the present time the gas industry can expect a practically unlimited market provided it is willing to fall in with this presupposition.

There is, therefore, no danger of a reduction or stabilization of the cost of gas at a rate of increased competitive ability, leading to a decrease in the income with no chance of offsetting this decrease by an increase in the turnover.

Also the gas industry for the first time in its history

has seen the prospect of adding to its income outside the proper field of gas making and gas distribution by the arrival of the by-product industry.

It is now up to the American gas industry to meet this situation half-way, and to organize its facilities in such a manner as to adjust them best to the demand of the market.

Has Not Been Quick in Realizing Latent Possibilities

Unfortunately for the development of the American gas industry its representatives have not been always very quick in realizing its latent possibilities. While untold efforts have been made to economize in production and to make what must amount to insignificant savings in the distribution, the many opportunities of a complete reorganization of its whole commercial and financial system have been overlooked.

No doubt such a state of affairs must also have reacted upon the financial organization of the industry. Capital is quick to realize a declining tendency of an industry. It will flow to the most speculative enterprise as long as it holds a reasonable promise for success, but it will be served out only in pittances to the industry that cannot offer more but a secure return of a few per cent.

The lesson is one for our gas men to learn. They themselves are responsible to-day if they do not find the financial support that is due to a very important industry.

Coming of By-Product Plant Has Injected a New Argument in Gas Financing

The coming of the by-product plant has injected a new argument into gas financing. Here is an opportunity to add materially to the income of these enterprises and to produce an additional asset of safety to the invested capital. The gas plant is no longer merely a public utility but the manufacturer of a very important raw material that can be handled like any other commercial product, and for which there is a practically unlimited demand.

Combine the two arguments, the economic and the financial, and you have the basis for a big scheme of industrial development which has the additional advantage that its uses are not confined only to the big enterprise, but are in the reach of the smallest gas plant. The realization of such a scheme requires:

1. An adaptation of the service of the gas plant to modern industrial domestic and municipal methods;
2. The commercialization of the by-product.

The first cannot be done by the introduction of paltry reforms, but by a whole-hearted movement for the alignment of the gas industry with the general economic activity of the country.

The second requires the organization of the by-product industry of the gas industry on a national basis.

We must learn to view the problems of the individual gas plant from its position as a minor unit of a great economic force, represented by the American gas industry as a whole, which in turn again is only a unit of the industrial equipment of the United States.

If seen from this wider point of view the individual unit unites itself more easily with the rest of the industry of the country.

Its possibilities for the rendering of effective service appear more clearly upon the background of all the other activities of the gas industry, and its very local problems vanish before the magnitude of those of the industry as a whole.

But at the same time a means is brought about to correct many of the present mistakes in the conduct of the affairs of the smaller unit which to-day are principally responsible for the generally not very healthy situation of the industry.

Wide Aspects of Future of Gas Industry

It is with this wider aspect of the future of the gas industry in mind that an attempt will be made in a series of articles, of which this is the first, to deal with the various management problems of the American gas industry.

The articles are not meant to be technical.

While the technique of gas making cannot be entirely set aside in such a study it is nevertheless intended to lay the principal stress upon the economic aspects of all technical progress.

Also the gas accountant will probably find reason to criticise many of the views of the author as not always consistent with the recognized principles of modern accountancy.

But both the technical man and the accountant, it is hoped, will find much that may add new zest to their work and will open to each of them new vistas in the direction of which may lie the solution of many of their present problems.

Economic science, when applying itself to the problems of our modern industrial life, is seriously handicapped by its apparent lack of practical experience.

The modern business man is only too easily inclined to suspect behind its teachings a new complication of his already all too complicated existence.

No doubt economic teaching, when not properly digested by the reader, is liable to create certain diseases of the brain as represented to-day in the imperfectly understood socialistic and communistic movement.

But there is a very practical side also to the more advanced of the theories of this group even if it should have helped us only to realize the limitations of our present social organization of which the gas industry necessarily must form a part.

Serving All to the Best of Its Ability

There is no advantage in discussing here the comparative relationship of the gas industry to its customers and the nation at large, under the aspect of public or private ownership, as it is absolutely immaterial who owns the enterprise, provided it fulfills its communistic duties of serving all at its best ability.

It is the ability of service alone which interests the consumer, and by which he will judge the operation of his particular company.

On the other hand public policy has given to the public utility a position of confidence and trust.

If it should prove itself unfit for that trust, there cannot be any protection for it whatever may be the form of its ownership.

To make the industry more fit for the execution of that trust and to raise the quality of its services, therefore, must be the principal aim of everybody interested in the future of the gas industry, and it is this aspect of its existence which is best guarded by a thorough study

of its present economic failings and its future economic possibilities.

Advantage and Disadvantage of Public Utility Management

Public policy has fitted the gas industry with certain prerogatives not enjoyed by other industries.

It has freed it often of competition, has given to it the right of public domain and many other rights generally not compatible with our usual conception of commerce and industry.

But the very existence of just these special rights is also forming one of the main obstacles to the commercial prosperity of many gas enterprises.

Having the sole right to sell gas in one district also is accompanied by the obligation to sell.

As the result every gas enterprise carries many accounts which would be regarded as utterly unprofitable in any other commercial enterprise and are just as unprofitable in that of the gas company.

In plain words, the gas company loses money on these installations, and it has to figure its rates in such a way as to equalize the loss in one direction by adding to the cost in another above that which would have to be charged if business were carried on in a strictly competitive and commercial manner. The lesson is obvious.

But the gas company cannot escape the duty of serving the unprofitable consumer.

It is bound by its charter to do so.

Consequently it must make the best out of a bad bargain.

If it should set out to reduce its rates or to uphold them in the face of ever-increasing cost of production, it must find means to neutralize the rate increasing effect of the unprofitable connection in such a manner as not to penalize too much the consumer who pays already much more than is his due.

There may be quite a number of ways by which this can be effected.

It is essential that the gas industry should realize these limitations, as only after their complete realization a successful attempt for a cure of the evils resulting thereof can be expected.

The gas industry in this respect is very much in the position of a man afflicted with a physical defect.

A man with one hand is certainly seriously handicapped in his earning capacity as a mechanic.

Nevertheless we have seen many men rise in their respective professions, notwithstanding this permanent handicap, which they have overcome successfully either by the selection of work not requiring the missing member or by adjusting themselves so perfectly to circumstances as to eliminate completely the effects of the impediment.

Gas Industry Important National Purchaser

But the economic position of the gas industry as a public utility is largely complicated by the fact that it is not only a distributor of an important industrial product under rules and regulations often hindering its agility as a commercial enterprise.

It also purchases one of the most important of the raw materials of the country, being in most cases in fact its largest individual consumer in its respective community.

The many miles of pipe lines connecting the gas consumer with the gas plant on the distribution end of the enterprise are duplicated by a similar line, often much longer in distance, bringing the coal to the producing plant.

Arbitrary rates hinder on the one side the complete commercial utilization of the enterprise and similar arbitrary rates regulate on the other the purchase price of its most important raw material.

We see, therefore, economically the gas industry as a manufacturing unit making an indispensable material of which the price is fixed by public consent against the grant of certain rights not conceded as a rule to industrial producers, but limited in its freedom of purchasing its raw material by the distance of the plant from its nearest competitive source of coal. It is a commercial enterprise bound in its activities in either direction by limitations which are not of ts own making.

In its commercial aspect the gas industry is supposed to make a profit in order to pay interest on the investment which has been expended in its making. In its public aspect it is to supply its product and service at the lowest possible rate. The situation is certainly one that may upset the mental equilibrium of those engaged in gas making, and there is plenty of evidence of American gas men chafing under it. They have the consolation that their situation is not unique and is very much similar to that of the leaders in all the other industries serving as public utilities and semi-public utilities.

By-Product Liberates Gas Industry

The reader will now understand why so much importance has been laid upon the introduction of the by-product industry as a possible assistant in the solution of the problems of the gas industry.

The by-product plant enters as the long desired wedge into the present locked situation of the gas industry.

While it is tied down in its actions on the selling and the purchasing side as to its regular activities of gas production and distribution, there is no such limitation as regards the by-products.

The by-product is not subject to that general scheme of prerogative and limitation; it stands alone and can be utilized to the full extent of its commercial possibilities.

It can be expanded or reduced as the interests of the plant demand.

There is no need to supply it in stipulated quantities, neither is there an arbitrary rate fixed by a board not immediately interested in the well-being of the industry.

On the contrary the price of the by-products is fixed entirely by the ability of the managers of the plant to produce it at the best quality, and the earnings from the sale of the product depend exclusively upon the cost of production.

But let it be well understood, the by-product is only remotely connected with the essential problems of the industry. It has come to us as a good stroke of luck and its coming does not relieve the gas industry from the duty of solving its more direct difficulties, those created by the present system of handling the business of the gas industry as a whole.

Lack of Standard Performance Data Tends to Prevent Improvement in Efficiency of Gas-Consuming Devices

I. Lundgaard Declares that, in Effect, a Premium Is Paid the Manufacturer for Low Efficiency and No Encouragement Is Held Out for Effort in the Direction of Improved Performance

The absence of performance specifications and the attendant lack of reliable information as to performance of the various devices built and marketed, is largely responsible for the generally low standard of efficiency of apparatus commercially available, and for the great difficulty experienced in marketing high-grade devices in competition with cheaper goods whose merits are not made known to the purchaser, declared I. Lundgaard, sub-chairman of the Industrial Fuel Committee of the Committee on Standard Performance Specifications for Gas Appliances of the American Gas Association.

Clear statements of pertinent facts regarding the performance of various gas furnaces offered for any purpose will enable the purchaser to judge the relative value, for his purposes, of the proposals received. The furnace manufacturer who finds that the relation between the economy of his furnace and its price makes it unsalable is quickly forced to adopt new characteristics for his furnace. The manufacturer who at the present time attempts to sell high quality finds it almost impossible to get a price corresponding to the cost and the merit of his goods, as there is no well-defined method whereby he can demonstrate and guarantee the superior quality of his furnaces, and within limits, there is greater profit in marketing goods of inferior quality. Thus a premium is paid to the manufacturer for low efficiency, and no encouragement is held out for effort in the direction of improved performance.

Essential Characteristics of Specifications

The essential characteristics of standard performance specifications may be outlined as follows:

1. No restriction must be placed on construction features, as it is in no sense the purpose of performance specifications to set up standards for apparatus design and manufacture or to limit the manufacturer in the full and free exercise of his ingenuity and resourcefulness in the making of designs or the use of materials. Only such minor construction features as are necessary for the observation of performance under the standard specifications, such as barometer holes, etc., may be required to be made in conformity with these specifications.

2. Standard performance specifications must clearly and definitely cover methods, and, when necessary, means of observation of such facts as, under stated conditions, have bearing upon or actually show the efficiency of operation of a device and a method of stating the capacity of the device in accordance with suitable standard rules. The tests required under these specifications should preferably be so simple as to make it possible for a purchaser closely to check by simple means the performance of a device, but they must be rigid enough to allow no doubt as to the facts in case sufficient pains are taken in the execution of the performance tests. Only such facts as are of practical value need be covered under standard performance specifications.

3. It must be clearly understood that such performance specifications as do not cover construction features and as are prepared to enable the manufacturer to state and, if so disposed, to guarantee certain features of efficiency under stated conditions, cannot be used for the protection of the purchaser or the manufacturer beyond the features dealt with in the specifications.

4. Standard performance specifications must have the approval of the American Gas Association and be adopted by the manufacturers of the devices covered by such specification.

5. A standing committee of the American Gas Association should be in charge of the further preparation of and future modification of performance specifications, and should be available for service to manufacturers and purchasers alike in the introduction and application of the established standards as well as in the settlement of disputes that may arise with reference to their interpretation and use.

Preliminary Report on Standard Performance Specifications for Underfired Oven Furnaces

The committee has prepared a tentative proposal for standard performance specifications for oven furnaces which is submitted for consideration. The work of the committee is only a start and continuance is urged, but the present report involving the initial steps toward an important end should be given the closest attention by those interested, in order that the whole matter may be placed on a sound foundation. There is at the present time not even a general recognition of the features of furnaces that must be dealt with in the proposed specifications; thus the first part of the committee's work consisted in determining what attributes of the operation of oven furnaces could be best used to determine its operating merits. The following are proposed:

1. Space rating.
2. Normal operating temperature.
3. Normal fuel consumption.
4. Calorific capacity at normal operating temperature.
5. Open-door temperature.
6. Maximum gas consumption of the furnace, and gas and air pressures required for this consumption.
7. Maximum temperature of operation.

The above does not include a load test of the furnace, but no satisfactory means of making this test has yet been found. It is true that in most cases the consumption under load, of different furnaces, is practically variable only with respect to the wall losses so that the no load test is sufficient indication of the relative effi-

ciencies of different furnaces. In regard to recuperative furnaces, however, and in general, in all cases where the heat of the exhaust gases is utilized to a greater or less extent, the operation under load becomes of greater importance, and it is believed desirable to establish a standard load test.

Definitions

The following definitions apply to the item enumerated above:

1. Space rating.

The space rating of an underfired oven furnace is to be a statement of the hearth area that is actually underfired and available for load, and the average height of the heating space immediately above this area.

2. Normal operating temperature.

The normal operating temperature is that stated by the furnace manufacturer as the temperature at which the furnace is designed normally to operate and for which data are given under definitions 3, 4 and 5. This temperature is to be observed in the stereometrical center—that is, the center of gravity of the heating space defined under 1. Furnaces must be equipped with openings so that this temperature can be taken.

3. Normal fuel consumption.

By normal fuel consumption shall be understood the B.t.u. per hour required to maintain normal operating temperature after complete balance has been reached.

4. Calorific capacity at normal temperature.

The calorific capacity at normal temperature is the B.t.u. required to heat-saturate fully the furnace at normal temperature and is determined as described under tests.

5. The open-door temperature.

The open-door temperature is the temperature observed in the stereometrical center of the heating space when normal fuel consumption is supplied and the heat balance is reached with the furnace door wide open.

6. Maximum gas consumption.

The maximum gas consumption for which the furnace is designed and the air and gas pressures required for operation at this consumption.

7. Maximum temperature.

The maximum temperature is the highest temperature registered in the center of the heating space, to which the furnace may be brought with safety to all parts.

Units of Measurement

Dimensions: Metric or English units may be used.

Heat units: The gross heating value of gas shall be used and may be stated either in metric or English units.

Temperatures: Degrees Fahrenheit or Centigrade.

Gas: Cubic feet or cubic meters to 30 in. barometric pressure, 60 deg. Fahr., or 760 mm. barometer and 15 deg. C. respectively.

Pressures: Height of water column or any other stated unit of measurement in metric or English units.

Instruments for Test

All instruments subject to calibration must be calibrated before and after the test.

Any instrument of proven accuracy may be used.

Type and make of instruments used shall be described in the test records.

Tests: The furnace shall be thoroughly inspected before tested and if defective, all defects found shall be remedied. No effect of faulty condition shall be recognized as part of the standard performance specifications.

The arrangement and placing of instruments shall be left to the ingenuity of the engineer, who must take pains to install instruments so as to get accurate results.

The following observations are to be made:

1. Barometric pressure.
2. Room temperature.
3. Temperature of gas.
4. Gross heating value of gas.
5. Gas consumption.
6. Furnace temperature.
7. Flue gas analysis.
8. Gas pressure between controlling valve and furnace.
9. Air pressure between controlling valve and furnace.
10. Kind of gas; carbureted water, coal, natural, etc.

The furnace shall be operated with maximum gas consumption until normal operating temperature has been reached, after which the gas shall be reduced while normal operating temperature is being held until heat balance has been reached as indicated by the fact that the heat input for temperature maintenance remains constant. Heat balance shall then be maintained for two hours, after which the door is thrown open while normal heat input is being continued until heat balance has been reached as indicated by the fact that the open door temperature remains constant for not less than one-half of one hour.

Only such adjustments of dampers and burners as are automatic and part of the equipment under test may be made when changing from closed door to open door test. Automatic means for maintaining ratio between gas and air may be employed.

All observations shall be made in regular order of routine and at ten minute intervals except that flue gas and calorimeter determinations may be made every twenty minutes, provided the quality of gas is not subject to rapid and substantial fluctuation. Furnace temperature shall be relative to room temperature. The cold junction of the pyrometer end shall, therefore, be at room temperature and its zero point referred to this temperature.

Calorific capacity shall be determined as follows:

Deduct from the total heat consumption up to the time of completing a two-hour period of normal temperature heat balance with normal heat consumption, an amount of heat equal to the normal heat consumption for the total time elapsed since the beginning of the test, for example:

Total time to end of period of normal heat balance, 5 hours.

Total heat consumption, 540,000 B.t.u.

Normal heat consumption, 69,000 B.t.u. per hour.

Normal heat consumption for 5 hours, 345,000 B.t.u.

Calorific capacity, 540,000 — 345,000 equals 195,000 B.t.u.

Report

The report of the test shall be made on a standard form, and all information for which space is provided, shall be furnished.

(*Continued on page* 426.)

Value of the Chemist in the Large and Small Gas Plants

Edward J. Murphy Points Out a Possible Yield of 72,000 Cu. Ft. of Gas Per Ton of Coal Carbonized as One Reason Why the Chemist in a Large Plant Is a Good Investment—H. Vittinghoff Points Out an Arrangement by Which the Small Plant Can Afford a Chemist

Although gas manufacture has been entwined with chemistry since its infancy, it has been only within recent times that any serious application has been made to the industry. The chemical work in a gas plant used to be very limited in scope, consisting mainly of the analysis and testing of gas, coal, coke and, in some cases, candle power and impurities. The last few years, however, have looked upon the gas plant chemist from another viewpoint, since it has come to be recognized that the very foundation of gas manufacture rests upon the working of certain laws of physical chemistry, declared Edward J. Murphy, in an American Gas Association convention paper.

It is not inferred that the proper design of mechanical equipment is of no importance, but, as Dr. Rittman once stated, "the finest equipment in the world designed with the utmost mechanical precision, but without regard for the laws which govern the reactions carried out in it, is likely to be less useful than apparatus of the most wretched mechanical construction, which does consider the chemical reactions involved."

The chemist then finds his greater value in ascertaining how to control those reactions peculiar to the gas industry and the application of this knowledge to the plant. In other words, his greatest work is, research on the economical use of raw materials and the greater yields of product consistent with the proper quality.

While these important points are occupying the chemist's attention, there is at the same time in every large gas plant a certain amount of routine and plant work to be done which is just as important in its own sphere. He is called upon to test coal, coke, oil, water, purification material, ammonia liquor, and the finished product—gas.

Plant control testing is also required of him, such as blue gas analysis, tests on tar and ammonia scrubbers, purifier boxes, tar and cyanide extractors, total sulphur in the finished gas, boiler flue gases, pyrometers, etc. Work of a general analytical nature on such substances as cement, firebrick, new purification material, holder paint and numerous other items has to be taken care of.

All of this work has definite value without which it would be impossible to determine quality or performance.

Without the analysis of a coal or coke, there would be no means of determining the moisture, volatile matter, fixed carbon and ash.

The heat value of these fuels could not be determined accurately without a calorimeter. The same applies to all other analysis and testing.

While the writer cannot give any specific instances, it is undoubtedly true that considerable money can be saved by the proper application of routine analysis and aside from this, the moral influence of obtaining quality on purchases is always present.

The chemist continues to be of value in investigating matters of secondary importance to the actual manufacture of gas. The recovery of waste material is an item worthy of consideration.

The use of basic brick in generator linings, the utilization of powdered coal under boilers, new methods of purification, all these are now in the thoughts of the chemist.

Wide Field of Usefulness

By co-ordinating with other departments, the chemist is enabled to become of further usefulness.

The purchasing department is benefited considerably when many of the items which it buys are standardized and specifications drawn up for them. Paints, paint and meter oils, solder, pipe covering, brass fittings, detergents, etc., are some of the items.

The testing of the efficiency of industrial appliances and gas tubing for the commercial department are illustrations of work which the chemist has undertaken with success.

Co-ordination with the holder department offers another example. Holders have at times to be emptied for repairs and before they can be filled again they must be purged free from air. The chemist, with the aid of a gas analysis explosion burette, can determine when it is safe to replace the manhole cover and fill the holder with gas.

A Fertile Field Yet Untouched

In returning to the topic of research by the chemist, it must be stated that while much valuable work has already been contributed, especially on carbureted water gas, the field is still fertile. The effect of such variables as temperature, pressure, time, contract and concentration have been studied by several investigators and attempts have been made at commercial application.

A comparatively new but most important phenomenon is drawing the attention of the chemist both inside and outside the field of gas manufacture. This phenomenon is called "catalysis," the term used to designate those chemical changes, the progress of which is modified by the presence of some foreign substance. The agent which induces or accelerates the effect is called the "catalyst."

Dr. Ostwald is authority for the statement that there is probably no reaction which cannot be influenced catalytically and no substance, whether elementary or compound, which cannot be used as a catalyst. Actually, catalysis is now being used as a basis of many industries, some of which are very

large, and its application to the manufacture of gas offers possibilities.

72,000 Cu. Ft. of Gas Per Ton of Coal Carbonized

An interesting application of catalysis to coal gas manufacture is given in a French patent taken out by Vignon. In this patent he attempts to devise a scheme for the complete gasification of the coal. The process consists of mixing lime with coal and distilling the whole at a temperature of 900-950 deg. C., whereby a yield of 12,000 cu. ft. of gas per ton of coal is obtained. Steam is then passed over the residual coke and lime at a temperature between 900-1,000 deg. C., which increases the yield of gas to 72,000 cu. ft. per ton of coal. The patent states that the calorific value of the gas is only slightly inferior to coal gas but the yield is several times greater than that produced by ordinary distillation and practically all the nitrogen in the coal is converted into ammonia.

The extraction of carbon disulphide from gas is being done in England with the aid of catalysis, using nickel as the catalyst. There is no doubt but that in the very near future, catalysis may be successfully applied by the chemist to the gas industry.

What has been written gives a general idea of the value of the chemist to the large gas plant. A few concrete examples taken from the writer's experience, follow.

Saving the Machinery

The blades of a large steam turbine were found to be badly eroded. The chemist was asked to investigate. He found that the steam entering the turbine contained lime salts carried over from the boiler. The salts, striking the blades at a high velocity, caused the erosion. The cause was remedied and the trouble ceased.

Boiler compounds were used in all of the boilers of one large company until the chemist showed that they consisted mostly of water—50 to 75 per cent—and a little soda ash and organic matter. Soda ash was substituted and the chemist prescribed the strength necessary to soften the water used. The result was a great saving of money.

A New Way to Cheat the Meter

The meter repair shop had difficulty in getting the proper quality of oil for the diaphragm leather in the meters. The chemist worked out a composition which, after being used for some time, seems to be giving satisfaction. This same department discovered that in certain meters which had been installed holes developed in the diaphragm. On examination it was found that the holes were caused by sulphuric acid which was apparently poured in to cause the meter to register falsely.

An extreme case in the activities of the chemist was the standardization of cleaning materials and detergents for the purchasing department. Twenty-seven kinds of cleaning materials were reduced to nine and these were standardized for all purposes.

The writer could give two or three pages of examples that would illustrate the usefulness and value of the chemist, but we believe that those enumerated are sufficient and diverse enough for the purpose.

The value and usefulness of the chemist depends upon the way in which the technical staff of a company directs his activities. If properly used, the chemical department can be made to pay for itself many times over every year. But far more important than merely saving money is the fact that chemistry is always leading the way to new and useful developments in gas manufacture.

Owing to the infinite variety of raw materials which local conditions of an economic nature force him to use, the proper scientific design of manufacturing apparatus is bound to be second to the necessity of exercising the greatest care in the choice and application of the most economical operating methods in working up such available raw materials, declared H. Vittinghoff, in an accompanying paper.

It is not intended to convey the idea that for our work crude apparatus is good enough or even acceptable, nor that a limit has been reached beyond which it is useless to push the application of science to the design of apparatus. On the contrary, not nearly enough has been done along this line in spite of the excellent work of our designers, especially in the last ten years; but it should be emphasized that our designers are, from the very nature of the problems which confront us, not in the position to offer us the aid which it was in the power of the electrical engineer to yield to the central station operator. In our line of work the end is not reached, or even approached, when we have installed suitable apparatus, even if of the best design for the conditions prevailing, but it still remains to devise proper manufacturing methods in order to attain the most economical results.

Such methods of manufacture can only be brought to the highest degree of perfection if their working out has the benefit of the services of a man with chemical training. In fact, the responsibility for the choice of the methods of manufacture to be adopted, should be placed entirely in the hands of a chemist, or, better still, a chemical engineer. Such a man is of necessity a specialist and usually has the limitation of a specialist in any branch of learning, an inclination to subordinate general aims to the requirements of an exact application of scientific principles. At this point, therefore, it should be brought out that we must differentiate between operation and manufacture. The executive head of the plant responsible to the general manager should be the operator who has to supply the demand for gas, arrange for the necessary raw materials, meet the labor problem, supervise the maintenance work, etc., and he should have on his staff a manufacturing specialist, a chemist, who should control the consumption of the raw materials and devise means for obtaining the best results from the apparatus and materials at hand.

This is undoubtedly the best organization for the large plant. For the small plant, i. e., the one producing less than a million cubic feet per day, the problem is immediately complicated by the expense of maintaining and paying for a dual organization. In such a case the management must decide whether it is wiser to dispense with the services of a superintendent perfectly trained along mechanical lines,

and take a risk of neglecting the maintenance work or running into other operating difficulties, or dispense with a chemist and carry on the manufacturing work in the usual rule-of-thumb way which, it is regrettable to say, is still so prevalent. The obvious solution of engaging for the duties of a superintendent the services of a man trained both as an operator and a chemist is much easier of statement than of attainment.

Fortunately, the very fact that the plant is so small that it is not in a position to maintain both an operating superintendent and a manufacturing chemist, carries with it, in a good many instances, its own compensation. The commercial problems, matters of policy, and questions of public relations are often not so weighty nor so arduous but that the general manager can give a good portion of his time to the supervision of the operating activities, relieving the superintendent of a great many of the duties for the performance of which in the larger plants he is responsible, and permitting him to devote his energies to following in detail the various processes of manufacture and by-product recovery.

He Can Be Afforded

Under such conditions it is entirely possible for even a small gas plant to engage the services of a technical graduate who, though he may not be a full-fledged chemist, has received in his course of study such a sound fundamental knowledge of chemistry, both general and analytical, as to enable him to apply this knowledge to the supervision of the chemical operation carried on under his direction. He should be able (and have the necessary time) to make the analyses which will enable him to demonstrate to his manager which raw materials available in the local market should prove most economical and result in the lowest operating costs. It is even more important that he devote considerable attention to the functioning of the manufacturing apparatus itself. In a water gas plant, for instance, he should give his attention not only to the daily test for carbon dioxide in the finished gas, but considerable time should be devoted to the investigation of the intermediate products such as "blue gas," producer gas and waste gas, and the supply of steam and air during the run and blow should be regulated upon a rational basis indicated by the information yielded by the chemical investigations. Aside from the routine investigations of the producer and flue gases in a coal gas plant, the distribution of the ammonia, for instance, in the gas as it passes through the various pieces of apparatus should, of course, be observed in order to discover how they function, while tar determinations yield equally useful and important information. Investigations of a general nature, such as the effect of introducing more or less steam or stack gas under the producer grates, higher or lower vacuum in the retorts, the effect on purifying efficiency of backward or forward rotation of the boxes, are innumerable and all yield useful information tending, if intelligently applied, toward lower manufacturing costs. They are, therefore, to be considered as part of the superintendent's chemical work.

It may be objected that this employee's time can be more usefully applied along more general lines. It is perfectly true that the observations which it is necessary to make to obtain the information outlined heretofore, are not of a nature to require the services of a highly trained technical observer, such for instance, as would be required for the work of the research chemist. In fact, most of the determinations can be made in "cook-book" fashion according to a set of typed instructions and they can be performed by an intelligent high-school graduate. What cannot, however, be accomplished in such fashion is the interpretation of the data gathered. This requires the best technical knowledge available at the plant. Assuming that the superintendent, as herein advocated, is a technical graduate, his duties should be so apportioned that he has ample time to devote himself to this part of the manufacturing work which, under the conditions outlined, he should consider his most important duty.

When we consider the operation of the very small gas plant, one turning out less than 300,000 cu. ft. per day, we often meet with a most puzzling problem. Frequently such plants are adjuncts to more important street railway or electric light properties. The manager of the combination plant may be a railroad man, the superintendent possibly trained only as a central station operator. Under such conditions the operation of the gas plant often limps along by hook and by crook as best it can.

Originally not profitable, it becomes less so, and the management very naturally concludes that small gas plants are inherently not revenue producers and is inclined to take the attitude that it is no use to throw good money after bad.

The manufacturing processes are neglected, and left to the tender mercies of a plant foreman, who has not the necessary training to obtain the best results nor the judgment to purchase the most economical materials available for local use. Under such conditions, remarkable improvement can be obtained from the services of a young technical graduate, who, as student engineer, devotes part of his time to chemical control of gas manufacture. As this kind of work, however, is of a highly specialized nature, it will take a long time before the young student can show results unless he has an opportunity to discuss his investigations and be guided in them by a more experienced gas engineer or chemist.

Sometimes this can be accomplished by engaging as a consultant, the technical director of manufacture of a gas plant located in a large neighboring town. Fortunate indeed it is, if the small gas plant is one unit of a number of properties under the control of a management syndicate, as in that case the services of a man qualified to give expert advice of a technical nature, are available at all times.

Chemist Has Come Into His Own

In a country as rich in natural resources as ours it is not astonishing that the industries should have been slow in accepting the benefits which exact science, when applied to manufacturing processes, can bestow. We can note with gratification, that the gas industry may claim to be among the first of the great branches of industrial undertakings to enroll the services of science in its endeavor to derive the greatest benefits from the smallest demand on the gifts with which nature has endowed us. With us the chemist has come into his own.

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As the Journal Views It

By-Products Much to the Fore

Everywhere when gas men gather one hears the word By-Products. In the gas journals the word is met with vastly increasing frequency.

And justly.

Apparently they and their natural accompaniment, the by-product oven, represent the one way out; at least a temporary expedient by which the existence of the gas industry may be prolonged and its prosperity restored.

Within a brief space, briefer than anyone could have imagined, the gas industry and the by-product oven have drawn close together. Gas men see and can prove the value of a by-product oven plant as an adjunct to the city gas supply.

Adequately higher rates, evidently, we cannot hope for. Costs mount up faster than relief can be granted.

A fresh source of revenue must be found, a source more flexible and within our control than that derived from gas rates.

The by-products of gas manufacture are a source immediately at hand, a source for which there is a sure market.

Fertilizer.

Motor Fuel.

Coke—Domestic and industrial.

These three represent a constant and rising demand. Properly developed, there need be no fear of a glutted market.

And the tar!

The dyestuffs industry will pay a good price for a part of what it contains. Then, there is road building, preservative painting, etc.

Where is the limit?

And no State commission has the say as to how high the price that shall be charged.

Gas can be sold cheaper.

And as it cheapens its market widens.

The day brightens for the gas makers, and as it does the by-product oven comes in inseparably as a part of their equipment.

An Obstruction in the Only Way Out

Absurdly short hours and unreasonably high compensation are among the demands of the worker of to-day.

The Job type of manager wearily waits. Dreams built on nonsense soon are dissipated.

This type of manager has reconciled himself to the adjustment period. Eventually there will be a return to sanity. Things will right themselves, in time, almost automatically.

There is another type of manager: the aggressive type. His spirit chafes at inaction.

He credits the worker with really knowing what he wants; perhaps not from conviction, but upon assumption, so he may have a basis upon which to work.

Well and good. But short hours on the basis of things as they stand, less hours, mean lesser production.

Say one man's labor for one day means the production of eight pairs of shoes. Say this man's day is reduced to six hours. Say his pay remains the same at, say, five dollars. Obviously the amount for labor chargeable to one pair of shoes has then increased.

Our aggressive type of manager dismisses brusquely the thought that five dollars a day, or ten dollars a day, or one hundred dollars a day constitutes a high wage. They may or may not. It is not the dollar that counts, but what the dollar will buy.

If he is to get his worker shorter hours and high pay in the true sense of the term, our aggressive manager must devise a means of keeping the labor cost of production down. He must not permit his solution of the problem to increase the cost of shoes to the gardener, the fisherman, the gas worker, the grocer and so on. Otherwise they too will raise costs and our shoe worker's advanced rate of compensation becomes nil.

"The machine is the thing," concludes our aggressive manager. "Improved mechanical contrivance that will enable the worker to produce more shoes in six hours than he did in eight.

This is not an age of miracles; but assume such contrivance exists.

Then our aggressive type of manager strikes a snag.

The introduction of the contrivance is bitterly opposed by the workers—no, this editorial is not a reprint of something published a generation ago. It is written originally to-day. Yes, even at this late day, in this era of general enlightenment, the laborer sees in the labor-saving device a dark plot on the part of the employer class to snatch away the bread from the mouth of labor.

Without its operator having his heart in its operation the labor-saving machine is practically a failure.

You have read expecting us to solve for you the grave labor problem, to suggest a means of quieting existing unrest.

It is not within our power. We have merely traced the history of one effort at solution. It is not a history that encourages.

We too chafe at passiveness. But perhaps ten years from now will find the Job-like type just as far ahead as we are.

Lack of Standard Performance Data Tends to Prevent Improvement in Efficiency of Gas Consuming Devices

(*Continued from page* 421.)

Curves

To show consistency and continuity of observation, curves shall be plotted.

Furnace Name Plates

The following information shall be given on furnace name plates:

Name of manufacturer.

Trade name of apparatus and other suitable items of advertisement and information that the manufacturer wishes to include.

Type of furnace, heating space, door, kind of gas, normal temperature, maximum temperature, maximum gas consumption, air pressure, calorific capacity, gas pressure, open door temperature, normal heat consumption.

In proposing the use of heat content of gas for measurement of heat input to the furnace, it is realized that the nature of the gas will influence its efficiency, but factors of correction as between various kinds of artificial gas and natural gas, for instance, may be established. The ideal situation would undoubtedly be to have a standard gas for the purpose of making these tests, but such a gas if determined upon, would probably not be universally available. It is recommended that the committee make a study of the relative efficiency of gases commercially used, and establish correction factors that may be appiled to results obtained by tests with different gases.

In order to test the feasibility of the proposed performance specifications, tests were run which showed that quite consistent results may be obtained under the proposed specifications. Details of these tests are not submitted as they have no practical interest outside of their values in guiding the committee in the work of establishing the standard performance specifications proposed herein.

Pictures Taken from Life Boom Results in Portland Gas Heating Effort

Photographs Reproduced Accomplish More in a Month Than Written Copy Produced in a Year — Why?

By JOHN H. HARTOG
Sales Manager, Portland Gas and Coke Company, Portland, Ore.

Nothing appeals to the mind so directly as a picture, especially a picture from life.

A drawing always impresses the mind with its being an imitation of reality. It pretends to show a scene, but the beholder knows that he looks at an idea of the designer, not at a fact. And as a rule the idea is but poorly carried out, for there are few real artists who have to design for a living. Hence many drawn pictures are more or less atrocious; generally more. Note the absurd hands on the figures representing women in fashion pictures; the girlish beauty of the young men in clothing ads, the maddening caricatures of beautiful woman to depict underwear or corsets and so on ad libitum.

That Scorn for Printed Matter

Intuitively, the mind, especially the discerning and artistically inclined mind, rebels at such drawings. The advertiser has succeeded in creating an antagonistic, instead of a receptive, spirit in the reader.

On the other hand, a picture taken from life, posed by real flesh and blood people, irresistibly attracts every reader. Thousands of women will read the caption under every photographic picture in every paper they get hold of, who decline to read the most interesting editorials or news items, aye, perhaps scorn to glance over all the headlines.

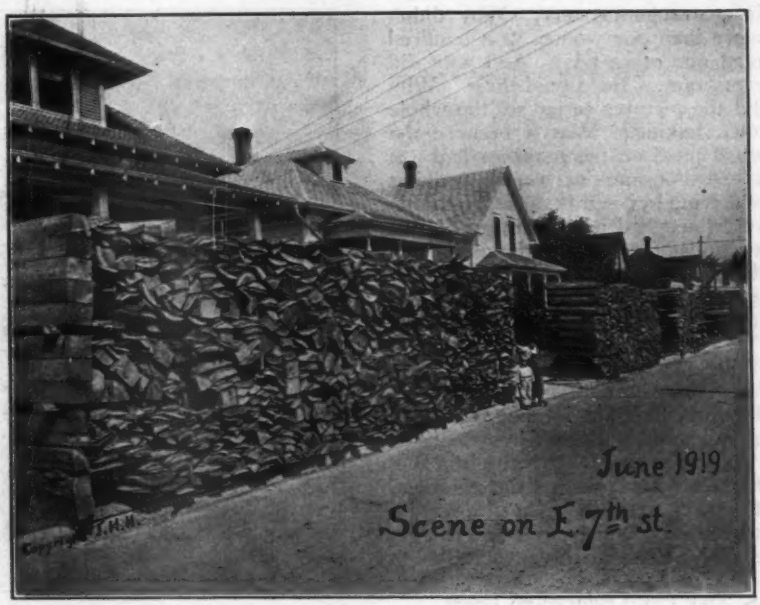
It was with this purpose in mind that the advertising department of the Portland Gas & Coke Company, of Portland, Ore., planned a series of pictures taken from life which would tell their own tale and would require but little type to tell the story.

Didn't Seem to Take

The subject to be advertised was the gas furnace, a hot air furnace, ingeniously evoluted from the radiator system.

This appliance had been advertised before, in readers, in scareheads, aye, in quarter page ads showing its shape, its profile, its very insides. But all this failed to convince the public.

I have seen a new heater advertised now for the last five months, advertised big and well, and yet I never yet have desired to install one. You have beheld many and many an ad, over and over again and yet never felt a desire run down your spine that made you rush out to buy. If you doubt this, please pick up the nearest newspapers. Glance over its ads. See how many of the advertised articles you have read about for years and yet have no desire to eat,



THE WINTER KINDLING PILED UP FOR WEEKS AND MONTHS AWAITING THE COMING OF THE WOODSAWYER

A JOB AWAITS THE HOMECOMING "THE MAN OF THE HOUSE"

chew, drink, smoke or even possess them. What is the reason?

And so with the Gasco Furnaces. The public seemed to remain cold. Sales in March none. April the n and e were left off, and that spelled "NO" sales. May and June the N dropped off and the record showed a big O. What was the matter?

In August the living picture series was started and the results were instantaneous. What is the secret? Hanged if I know. The public mind is a strange mystery. Why didn't more than one women in a hundred read our other ads? And why did every one of them read these? Why did the pictures series set the whole town talking? Was it because the wood piled on the parkings had annoyed thousands of women walking or driving by? Or because thousands of women had been staring at these woodpiles for weeks and months, unable to see the street at all, at all, because no woodsawyer could be secured? I don't know.

Was it because the "sweet music" of the snarly saw, that gets so mad every time its path is crossed by a chunk of wood, had annoyed milady many a time? I don't know.

Or was it the delightful job in the basement, the splinters, the nuisance of having to wash up a "hundred" times a day, which appealed to the reader? I'm sure I cannot tell.

The Line Begins to Form

But the fact remains that within a week from the time the series started, customers commenced to hand in their orders. There had been plenty of inquiries before, but inquiries without sales don't make the mare go.

A motto was jokingly given the sales force: "A furnace a day keeps the sheriff away." This appealed to them, for even out here, where dollars grow on trees (especially on fancy pear trees), living is beastly high, yes, even beastly living is high. (At least so my farmer tells me as an alibi for demanding 60 cents for eggs these delightful summer days.) But the motto was gotten up on account of its euphony and no one on the force (sales, not police) dreamt of ever selling a furnace a day. But they did. Like the Yanks who took an untakable position from the enemy and nailed up a sign: "It couldn't be done so we did it." They all knew it couldn't be done and then did it. Yes, it got to be such a regular daily occurrence, that they raised the sheriff's allotment and were selling two and sometimes three a day, till the operating department cried: "Have a pity!" And as Aug. 31 came and wrote finis on the calender, as the month of peaches folded its tent like the Arab and as silently stole away to make room for the Labor Day parade, the record showed that more gas furnaces had been sold in one month than in all of 1918. More did I say? Why be bashful about the truth? Not only 25 or 50 per cent more, but almost twice as many. And everybody on the force (sales, not police) says: "And we've only commenced!"

The pictures ran in all the four daily papers for two weeks, and were from two columns to four columns wide, from 6 to 8 inches tall, and when the two weeks were over, we didn't have to lay off a force of temporary solicitors, with or without apologies or charity promises. All

THIS IS A PICTURE OF "THE MAN OF THE NON-GAS HEATED HOUSE" IN HIS "RECREATION" HOURS

we had to do was pay the bill and book the orders.

Presenting Gas Stoves and Appliances Attractively

By William Bliss Stoddard

Now that Thanksgiving is approaching, every housewife is thinking of the big dinner she is going to prepare and, with remembrances of the inconvenience of coal and wood in previous years, she will be in a frame of mind particularly adaptable to acting on the suggestion of purchasing a gas range; so now is the time for gas men to get busy and present their most convincing arguments. Interesting copy makes instant appeal, and as the holiday season is also coming the suggestion of a pre-holiday gift will likewise be effective. In this respect the gas appliance men could well pattern after Kelly's, one of the big house-furnishing establishments of Marion, Ind., who has recently specialized on gas stoves with the fireless cooker attachment. Listen to a couple of his ads, which combine imagination with the utmost practicality:

NOW HE HAS A PESKY SPLINTER IN HIS FINGER

Aesop's Fables and Their Realization

How many recall the days of fairly tales, and how many remember the fable of the tiny elves and the shoemaker—how the poor shoemaker would each night cut out the leather to make up into shoes the next day, place it on his workbench and retire for the night, and upon awakening in the morning find that the little elves had been there during the night and completed his work—all the shoes finished and ready?

My! how you sat in open-mouthed wonderment and marveled at the fascinating story.

Now, did you ever happen to think of the modern GAS RANGE in that light? No, you never did. But if you will stop to compare it with the story you will find it an exact counterpart. The Blank gas range, with the fireless cooker attachment, enables you to place the food therein and go about your usual work, or to take a trip downtown or a motor ride; and when you return, refreshed with an afternoon in the open air, your food is ready to serve, piping hot and with a much more delicate flavor than when cooked in the ordinary way.

Come in and let us give you a personal demonstration.

EVEN THE MISTRESS OF THE HOUSE HAS TO HELP WITH THE HEAVY, DIRTY WORK CONNECTED WITH A COAL FURNACE

What woman would not be interested in such an ad, or in a similar one referring to play days?

THE SAME "MAN OF THE HOUSE" IN HIS RECREATION HOURS SINCE HE CHANGED TO GAS HEATING

The Greatest Joys of Life Were Those of Our Play Days

Regardless of what fate has yielded in later years, or to what degree fortune may have smiled on you—when thought revert to the "play days" of youth—the horse-races on broomsticks, the steam boilers made of cans—are invariably our happiest memories.

But now mature life, even with its added responsibilities, has allowed for a resumption of these play days.

With a Blank GAS RANGE and fireless cooker attachment cooking is mere play. Surely you want one of them, and surely you shall have it.

A small cash payment—and the rest at your convenience—and the GAS RANGE is yours. Get one in time to prepare the Thanksgiving feast, and see how much more time it gives you to enjoy the company of your houseful of guests.

Come in and let us give you a personal demonstration.

Of course, they were wise enough to back up their advertising with an effective window display. It showed a modern kitchen, well lighted, with white enamel furniture and a gas range with fireless cooker attachment. On the table was a papier-mache turkey, and a card in a wire rack close by said:

Save the Price of the Turkey by Using a Gas Range

In these days of soaring prices, when the royal bird commands a truly royal price in the markets, you can easily save the cost of the bird by the amount you save on fuel, and prevention of shrinkage in weight, when you use a GAS STOVE with fireless cooker attachment.

Inside the store there was a three-day demonstration of the use of the fireless cooker by an expert, and also daily lectures on the economical use of gas, both for cooking and heating purposes.

Demonstrating the Convenience of Gas

By WILLIAM BLISS STODDARD

As the cold weather approaches, the convenience of having plenty of hot water whenever you need it becomes more apparent, and it was with the object of pushing their sale of hot-water heaters that the Peoples Gas Light & Coke Company, of Chicago, recently arranged a series of attractive demonstrations that interested even the blase boulevarders.

One of their windows had a canvas drop showing the ocean, with rolling waves, and a deep blue sky above it. At one side was a card:

Oceans of Water

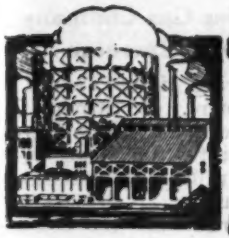
A continuous performance—no matter how much water you draw at the faucet, the heater provides an unlimited supply. When the faucet is turned on or off the gas goes on or off automatically—no waiting.

At the other side was a gas hot-water heater, beside which was a card: "Turn the faucet outside—Look into the mirror inside. The gas that flashes on in the heater heats the water that flows out of the faucet." In the window is a black box with mirror top which reflects the burner of the gas heater. Outside the window are two metal basins, with pipes running to them from the heater, and by turning the faucet the hot water gushes out, while by looking into the mirror one can see the gas burning in the burner. The majority of the crowd is from Missouri, and few pass who do not give the faucet a little twist. Seeing is believing, and the hot water that gushes forth on the instant is the best proof that the heater does everything that its prospectus says it does.

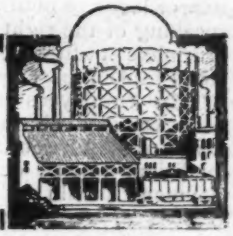
Cartoons were also employed to good effect in driving home the comfort of an adequate supply of hot water, the company inviting the public to "look on this picture and then on that." Large pen-and-ink drawings were used, the first depicting a man turning on the hot-water faucet for a shave and humming to himself; the second shows the water still running cold, and the man, with a disgusted expression, exclaiming, "Oh, I know, the furnace isn't working." The third shows him shaving with cold water, and is captioned: "A cold shave and no bath—I'll go to the gas company to-day and get one of their little gas heaters." At the other side of the window was shown the installation of a hot-water heater, and one of them open to disclose the coils, while a card advised: "Tank water heaters for hot-water comfort—Installed complete on your tank."

Gas appliances for laundry work were also exploited by this firm. No better method could be adopted

(*Continued on page* 436.)



NEWS OF THE GAS INDUSTRY



Chicago Company Opens Classrooms in Six Station Plants

O. E. Norman Heads New Department of Training and Education—Superintendents Already Note Change in Employees Attending Classes

The Peoples Gas Light & Coke Company, through its newly established department of training and education, is taking the lead on gas companies of the country in co-operative effort to aid its employees in securing an education. The company has opened classrooms in six of its station plants, where elementary instructions in reading, writing and arithmetic has begun with good attendance at all classes.

The classes at present are primarily for those foreigners who have had no opportunity of learning to speak, read or write the English language. The classes now contain men ranging from 21 to 57 years of age, with employees born and raised in Poland the predominating race in attendance. It is later planned to extend the classes to more advanced work.

The work is in charge of O. E. Norman, head of the department of training and education, while Miss Mary A. Crawford has taken direct charge of the school plan.

"The work we have started, in my opinion, is the greatest thing that has been done for the employees and for the company in years," Miss Crawford said. "The big thing to overcome in the foreigner is his bashfulness. When this is overcome, he is eager to learn, and he attends classes regularly. The superintendents report a big change in the attitude of the men who are attending classes toward their work and in their work itself."

The company plans soon to extend the class work and combine it with a community center idea they are working out, using the classroom as the community center and staging entertainments of all kinds to which all employees in the particular plant and their families will be asked to come.

There is no expense connected with the schools so far as the employees are concerned. The company furnished the classrooms at the plants and furnishes all charts, books, paper and pencils. The teachers are supplied through the co-operation of the board of education.

Grand Rapids Business Men Want a Gas Plant

It is reported that a number of prominent business men in Grand Rapids, Mich., through the city's chamber of commerce, have interested themselves in establishing a gas plant for manufactured gas in Grand Rapids.

USE
GAS
THE MODERN FUEL
GAS HAS 1000 USES
THE PUBLIC BE SERVED
We sell all types of appliances using Gas as an Industrial Fuel.
We ask only a reasonable profit for the make we think best.
We do this so that our competitors may also be encouraged to sell the better grades.
THIS IS TO YOUR ADVANTAGE!
LET US FIND A NEW USE FOR YOU
Boston Consolidated Gas Co.
Industrial Fuel Department

TYPE OF ADVERTISING THE BOSTON COMPANY IS RUNNING IN THE BOSTON HERALD WEEKLY

Philadelphia Gas Works Produced Over Two Billion cu. ft. in 3 Months

The city of Philadelphia's share of payments made for gas consumed in Philadelphia during the months of July, August and September of this year is $700,527, according to a report submitted to City Controller Walton by the United Gas Improvement Company.

The report shows that the Philadelphia Gas Works, which the company leases, produced 2,782,487,610 cu. ft. of gas during the three-month period. The amount of money received, including payments for gas consumed in the previous quarter, was $2,808,597.32. The total sum received by the city for the first nine months of this year amounts to $2,367,412.06.

"Strikes in a Public Utility Should Be Made a Penal Offense"

At the annual meeting of the Associated Industries of Massachusetts, which was held last week, the retiring president, Frederic C. Hood, made an address on the subject of "Employment Relations," which was considered a notable feature of the association's sessions. Mr. Hood described public utilities as "those privately owned corporations given a franchise to serve the public interest and which, because of being in whole or in part monopolistic, are regulated by some governmental board of commission as to their rates of charges, or selling prices, or their earnings, or their capitalization."

Mr. Hood advocated the regula-

tion of labor of public utilities. In speaking of the right of employees of public utilities to strike Mr. Hood said, in part:

"The employees of this group also should not have the right to strike or quit simultaneously, but conditions arising out of the employment should be regulated as to rates of wages and perhaps of hours, but not as to discipline by the same government board of commission which regulates the particular corporation. It is un-American in this republic of ours that the health and welfare of a community can be made miserable by the actions of any group of persons employed in a public utility on which the community is dependent. Strikes in a public utility should also be made a penal offense.

"I would not object to any agreement between a public utilities corporation and its employees to refer such question to the court established for that purpose under Group 1, but it would seem fairer that the same board which regulated the financial operations of the corporation should regulate wages when asked so to do, for wages go to make up the costs of the corporation."

Newton and Watertown Gas Light Co. Compelled to Increase Rates

Waldo A. Learned, president of the Newton & Watertown Gas Light Company, told the State Gas and Electric Light Commissioners that increased wages and higher taxes made it necessary for the company to petition for authority to increase its price of gas from $1 to $1.10 per 1,000 cu. ft.

He said the company has increased the pay of its employees 50 per cent and expects further demands from them. The company is paying no dividends. The commission delayed action until further data are furnished.

Merger of Cohoes Companies Effected

The merger of the Cohoes Gas Light Company and the Cohoes Company with the Cohoes Power & Light Corporation, of Cohoes, N. Y., has been effected, according to notice filed with Secretary of State Hugo. The merger was approved by the public service commission several weeks ago.

Knoxville Gas Company's Plea for Higher Rates Goes to U. S. Court of Civil Appeals

The case of the Knoxville Gas Company vs. the City of Knoxville, Tenn., in which the gas company has been seeking through the Federal courts to secure an increase in gas rates, is to be heard in the United States Court of Civil Appeals at Cincinnati, Ohio. The case has been ordered heard by Judge John W. Warrington, resigned, and his old associates, Judge Arthur C. Dennison and Judge Loyal E. Knappen.

The efforts to secure relief through the utilities commission were initiated after the appeal was taken to the Cincinnati court. It is expected that the case will be appealed to the United States Supreme Court in the event that the Court of Civil Appeals should sustain the decision of the lower court and in the event that it should be decided that the Federal court action would supersede that of the utilities commission.

Western States Gas & Electric Earnings

The Western States Gas & Electric Company, which serves Stockton, Cal., and vicinity, Richmond, Eureka, Cal., and other cities north of San Francisco Bay has issued its earnings statement for the year ending August 31, 1919. This statement shows a percentage of increase in gross income of 14.50 per cent, and is one of the few public service corporations to show an increase, if small in net income and surplus.

From the following comparative figures it will be noted that the increase in gross earnings was larger than the increase in operating expenses, and that the surplus, after interest charges, was larger than that of last year.

	1919.	1918.
Gross earnings	$1,788,412	$1,561,616
Operating expenses and taxes	1,056,042	921,362
Net earnings	$ 732,370	$ 640,254
Interest, 5 per cent bonds	$ 281,675	$ 234,936
Interest, 6 per cent notes	93,840	93.840
Interest, 6½ per cent notes	44,200	3,686
	$ 419,715	$ 332,462
Balance	$ 312,655	$ 307,792

Twin Cities Gas Company Allowed Increase

The hearing of the Twin Cities Gas Company, of Strong City, Kan., in the matter of an increase in the gas rates took place before the public utilities commission in Topeka, Kan.

The attorney for the company gave figures to the commission showing a present valuation of $45,000 worth of property and equipment now owned by the gas company, and showed that after the company had made all deductions for expenses and a 10 per cent deduction for depreciation of equipment their expenses were about $3,000 greater than their income.

The company is not asking for any specific sum in increase in rates over the 30 cents for 1,000 cu. ft. now in force; their idea is to leave that matter with the commission.

Attorney Ganze, the company's attorney, proposed that an increase to 45 cents per 1,000 cu. ft. be made to be effective for the next six months, commencing with October, and to this proposal Judge Meckel, for the city, made a counter-proposal that the rate be cut to 40 cents per 1,000 cu. ft., effective for the next six months, and that in the meantime an expert accountant should go over the gas company's books and draw off a statement showing the financial condition of the company and its receipts and expenses, etc.

During the six months, it was also agreed, an expert engineer should make a survey of the company's property and holdings, and this report, together with the report of the accountant, be turned over to the Twin Cities and they would then endeavor to come to an agreement on future rates.

Judge Meckel and Attorney Ganze then submitted these propositions to the commission, and the latter accepted them as outlined.

Gas Heating Making Progress in South

The Charlotte and Greenville, N. C., branches of the Southern Public Utilities Company have both recently conducted "drives" on "Gasteam" radiators, for heating homes, offices, stores, churches and other buildings in these cities. The system of gas heating had been introduced before in both cities, and Greenville had more than one hundred installations already in use. The demonstration in that city resulted in the placing of nearly one hundred more radiators, and the going is still good. Among the new customers are two office buildings, two large stores, one church and a number of residences.

In Charlotte the drive was even more successful. Mr. Forney, manager of the commercial end of the gas department, reports nearly two carloads of "Gasteam" radiators placed during the campaign, and is of the opinion that they will be a staple commodity in the future. Among the establishments that have contracted for the installation of "Gasteam" heating systems are the following: Charlotte Wagon & Auto Company, Talley-Rucker Company, Fox Dancing Academy, Lee Tire Sales Company, Pennsylvania Rubber Company and the Sheppard Drug Company.

New Jersey Gas Hearing Ended—Board Studying Evidence

Following the submission of additional evidence to Commissioner March of the New Jersey State Board of Public Utility Commissioners by the Public Service Gas Company of New Jersey to back up its application for increase in the gas rates, the hearing was declared at an end. L. Edward Herrmann, counsel for the State commission, said that the additional evidence would be analyzed by the board, but he would set no possible date for the ruling on the application.

The testimony by W. S. Barker, controller for the gas company, applied to the Passaic division and showed increases in capital invested in that division as well as the revenue and operating expenses since July, 1911. At that time the commission granted the 90-cent rate to all divisions as the result of the application of certain municipalities in the Passaic division.

It is planned to show the changes in that division since the 90-cent rate became effective, bringing the figures to date so that the present conditions may be made comparable with those on the basis of which the reduced rate was granted.

Gas Stove Department of Winnipeg Electric Railway Company Moves to New Home

The Gas Stove Department of the Winnipeg Electric Railway Company has just been transferred to a new home—the ground floor of the Electric Railway Chambers. Its former location in Winnipeg was one of the earliest business sites in Winnipeg, and the gas department had conducted business there for many years. The department developed very rapidly, and the increasing business necessitated a change to more commodious premises.

E. R. Herrington has been in charge of the organization of the appliance department as superintendent for the past two years, and very big increases in business have been recorded. The appliance department, various pictures of the interior of which appear, is part of the gas department of the Winnipeg Electric Railway Company, which department is under the management of M. L. Kane.

The Electric Railway Chambers, where the appliance showrooms are located, is one of the biggest business blocks in Winnipeg and situated right in the heart of the city. The appliance showrooms take over the whole of the ground floor, and are very attractively laid out with model kitchen displays.

THE ELECTRIC RAILWAY CHAMBERS, THE NEW HOME OF THE GAS STOVE DEPARTMENT OF THE WINNIPEG ELECTRIC RAILWAY COMPANY

WATER HEATER DISPLAY, WINNIPEG ELECTRIC RAILWAY COMPANY

$1.56 Per Lamp Estimated increase for St. Louis New Street Lighting Contract

Considered Remarkably Low Compared with Estimated Arc Light Increase

The cost of lighting the streets of St. Louis, Ill., in the gas light district will be increased approximately $36,000 per year at the expiration of the present contract in September, 1920, members of the Public Utilities Committee and the Board of Aldermen estimated, following a conference October 23 with officials of the Laclede Gas Light Company and the Welsbach Street Lighting Company of America. The gas light district of St. Louis, Ill., comprises all the streets except those in the downtown district.

The increased cost of gas lighting is considered remarkably low compared with the prospective $100,000 annual increase for lighting the arc light district. This increased cost is based on gas at the rate of 50 cents per 1,000 cu. ft. and the cost of the lamps, services and posts with maintenance at $18.35 per lamp per year.

The latter figure, it was explained, is that which the Welsbach Company charges the City of Brookline, Mass. Arthur E. Shaw, president of the Welsbach Company, said that he would be glad to give St. Louis this service at a similar cost.

The Public Utilities Committee was informed that there are approximately 23,000 gas lights used on the streets of St. Louis. The city's contract is with the Welsbach Company, which in turn has a contract with the Laclede Gas Light Company. The present cost of a lamp per year is estimated at $22.79 and it was estimated by members of the Public Utilities Committee that with gas at 50 cents, the annual consumption for one year of one light would run the cost of the gas for the light to about $6. Adding this cost to the figure at which Mr. Shaw said he would be willing to contract with the city the annual cost per light per year would be $24.35, or $1.56 more than it pays per light now. Mr. Shaw said that at Brookline, his company furnishes the complete lighting equipment, purchasing only the gas. There the company maintains only 1,120 lights, compared with the 23,000 maintained in St. Louis.

President Charles L. Holman said the Laclede Company would be glad to bid for the contract next year, and that a contract with a term of from one to ten years would be agreeable.

Shuts off all Industrial Consumers

Owing to a reported gas shortage in Ashtabula, Ohio, the Ashtabula Gas Company issued an order shutting off all its industrial consumers. The plants affected are the Great Lakes Engineering Works, the Ashtabula Bow Socket Company and the steel car repair shops of the New York Central.

J. W. Dana Submits New Rate Plan to Kansas Commission

J. W. Dana, acting for the Wyandotte County Gas Company and the Citizens' Gas Company at Lawrence, Kans., filed an application with the Public Utilities Commission for an entirely new scheme of gas rates. It is reported that the plan has not yet had the approval of the Doherty interests or of the utilities commission. It is apparently a combination of the three-way system of Henry L. Doherty and a continuance of the 80-cent gas rate.

A "demand" charge ranging from fifty cents a month for a maximum flow of 90 cu. ft. an hour up to $1.50 a month for a "demand" of 475 cu. ft. an hour, plus a charge for gas of 80 cents a 1,000 ft. for the first 3,000 used each month, and 70 cents a 1,000 for all in excess of 3,000 a month. For the average small consumers, this substitutes the 50 cents a month "demand" charge for the present 50-cent minimum, and gives him all in excess of 3,000 ft. a month at 70 cents.

Under the proposed contract the distributing companies would pay the Kansas Natural, the Doherty interests, 30 cents a 1,000 ft. for gas at the city gates, instead of the 28 cents they now are paying.

Good Supply of Gas Promised Louisville, Ky.

Construction of an added pipe line from the Johnson County fields to the main Louisville, Ky., line of the Louisville Gas & Electric Company is near completion. It was stated by Halford Erickson, vice-president of the company, that the city will be supplied with more than 14,000,000 cu. ft. of gas daily. The city franchise calls for 12,000,000 cu. ft.

Mr. Erickson said the supply promised through contracts with the Pennegrade Oil & Gas Company, with fields in Floyd and Johnson counties, would not be available for some months, but that he was certain Louisville would have plenty of gas except during an extreme cold spell, when factory users would be limited.

Gas Company Contributes $15,000 to San Diego Naval Training Fund

H. H. Jones, president of the San Diego (Cal.) Consolidated Gas & Electric Company, sent the company's contribution, a check for $15,000, toward the completion of the naval training station fund.

A fund of $300,000 is being raised in San Diego to purchase a site for a naval training station. The new naval training station will make the city of San Diego the center of naval activities on the Pacific Coast.

Gas Burned Forty Years Paid for by Wrong Man Because of Mistake in Meter Connection

In one of the Boston & Maine R. R.'s stations in Lawrence, Mass., a man named Loomis has conducted a restaurant for forty years. Outside of the station, at the entrance door, there is a gas lamp post. There are two gas meters on the property, one for the railroad company, and one for the restaurant man. Recently the Boston & Maine R. R. has been doing some overhauling of plumbing in making extensive repairs and improvement at this station, and in tearing down a wooden storm covering over the doorway of the station it was discovered that the gas lamp, instead of being connected with the station pipes, had by some mistake of the plumber at the outset, been connected up with the pipes to the restaurant meter, and consequently the gas used in this light, which has burned nightly for forty years, had been paid for, not by the railroad, but by the owner of the restaurant!

It would be interesting to learn just what the rebate would be to the restaurant man and how the lawyers would go about it to make the railroad settle for the free light its station has enjoyed since the building was erected in 1879.

A SECTION OF THE SHOW ROOM FOR GAS APPLIANCES, WINNIPEG ELECTRIC RAILWAY COMPANY

GENERAL VIEW OF DISPLAY FLOOR OF THE GAS APPLIANCE DEPARTMENT, WINNIPEG ELECTRIC RAILWAY COMPANY

Inventory Reports Contained in Chicago Company's Records Tally with Engineers' Reports

The experts employed by the city of Chicago have found that the figures of the engineering firms contained in the voluminous reports of the Peoples Gas Light & Coke Company, were in most cases identical with the figures prepared by engineers employed by the city of Chicago to make similar reports. The engineering firms, according to the testimony before the Illinois Public Utility Commission, also found the company's figures, which they checked against in making their own reports for the company, were almost identical with their figures. Thus, it was brought out, that the inventory reports contained in the company's records, and prepared by the company's employees, tally with the reports of the five engineering firms

which prepared the latest reports and with the reports prepared by the city experts.

"When the gas company engaged the five engineering firms to prepare an inventory," testified the head of one engineering firm, "the company's officials gave only one order. It was this: 'Make an accurate inventory of our property.' We had no other instructions."

Conversion Privilege on Boston Consolidated 5-Year 6% Debentures Expires

The conversion privilege on the five-year 6 per cent debenture bonds of the Boston Consolidated Gas Company expires on Nov. 1. Under the indenture the bonds are convertible into stock at par on any interest date prior to maturity. As the bonds mature Feb. 1, Nov. 1, therefore, is the last date on which the exchange can be made.

Only a very small percentage of the bonds have been converted into stock. Originally there were $25,000,000 of the bonds outstanding, and on Dec. 31, $24,410,272 were out. There has been but a slight reduction from this amount by conversion.

The company might have to fund practically the entire sisue when it matures next February. This matter has not come up for consideration, according to officials.

The bonds were sold to reimburse the company in part for money paid in acquiring $15,800,000 capital stock of the New York Edison Company at par, and $9,500,000 stock and $5,000,000 first mortgage 50-year 5½ per cent bonds of the Astoria Light, Heat & Power Company.

Southern California Company Supplies New Territory with Natural

The Southern California Gas Company announces that it has begun the supply of natural gas to all its consumers in San Bernardino, Riverside, Cal., and surrounding towns. Since natural gas requires more air than artificial gas, most gas appliances required a readjustment of the gas burners. The impossibility of readjusting all such appliances "at once" was readily recognized by the 10,000 consumers in this territory, and the company asked the patience and co-operation of the consumers until such readjustments could be made.

Petitions Increase Over Temporary Increase Allowed

The Rockford (Ill.) Gas Light & Coke Company has petitioned the Illinois Utilities Commission for permission to increase their rates over the temporary increase which went into effect Nov. 1 last. A. S. B. Little, the commission's engineer, recently made a report on his investigations of the company's business, and this hearing was for the purpose of cross-examining him on it.

The rates asked by the company to be permitted to adopt are as follows: First 5,000 cu. ft. of gas per month, $1.35; second 5,000, $1.30; next 10,000, $1.25; next 10,000, $1.20; next 20,000, $1.15; next 50,000, $1,10; next 200,000, $1.05; next 200,000, $1; next 500,000, 95 cents.

For all gas over a million cubic feet used per month a charge of 90 cents per thousand would be made.

In pre-payment meters a charge of 25 cents for each 190 cu. ft. would be made.

A minimum charge of 50 cents per meter per month would be made where less than 400 cu. ft. of gas are used.

A discount of 10 cents per 1,000 cu. ft. would be made where bills are paid within ten days after the first of the month.

First 5,000 cu. ft., $1.20 per thousand; second 5,000, $1.15; next 20,000, $1.10; next 20,000, $1.05; next 50,000, $1; next 200,000, 95 cents; next 200,000, 90 cents; next 500,000, 85 cents; next million feet, 80 cents. This discount of 10 cents a thousand for payment within ten days after the first of each month is also in force. Gas sold through prepayment meters is at the rate of $1.20 per 1,000 cu. ft. net.

A minimum amount of 50 cents a month is collected if gas to that value has not been consumed through the meter.

Demonstrating the Convenience of Gas

(*Continued from page* 430.)

than their very practical one of having ironing boards and gas irons set in the windows, and two young women, in white caps and gowns, ironing all kinds of flat work, which they placed on big racks beside them. A card advised: "All the laundry used by the Peoples Gas Light & Coke Company is ironed on these machines." Another card said: "Of course, there will always be clothing that must be hand-ironed, but enough human energy to build another Panama Canal must have been wasted over sheets, underwear and such articles. The Simplex gas ironer irons aprons, nightgowns, pajamas, undergarments, children's play clothes, hosiery, negligees, silk shirts, and even presses trousers. A full day's ironing done in an hour at a cost of 3 cents. Why hesitate?"

They also showed the convenience of the gas heater for the electric washer, exhibiting one in operation, with the explanatory card:

Steaming Hot Water for Soiled Clothes Is Often More Necessary than Soap

The gas-heated washer keeps the water piping hot and washes the clothes so clean that bluing is unnecessary. Press a button, turn the lever—the machine does the rest. Clothes washed in one hour's time, at 5 cents per hour.

One of the most practical of their appliances—the one that took the eye of every woman who had to do a family washing—was their gas clothes dryer. They showed one of these, with the clothes spread out on racks in front of it and by it a big card:

Half the Worries of Wash Day Are Made Up of Weather

Is it going to be a good day to dry the clothes? Good weather or bad, the gas dryer is full of clean, hot, moving air. Hang the garments on the racks. In twenty minutes or less all the clothes are ready to iron. Doesn't such an appliance appeal to you?

The actual sight of the gas appliances in useful operation was more effective than would have been reams of literature; and the catchy cards that accompanied the machines called attention to some of the good points that might otherwise have been overlooked.

COAST VALLEYS GAS & ELECTRIC COMPANY.—Authorized by the Railroad Commission to use $13,998.97 obtained from the sale of bonds to reimburse its treasury for construction expenditures.

Proposed Change of Freight Rates Under Consideration

The proposed change from class rate to commodity rate on carload lots of soft coal from Matherville, Ill., on the Rock Island & Southern Railroad, to Watertown, Hampton, Port Byron, Cordova, Albany, Thomson, Timbuctoo, Hickory Grove, Mount Carroll, Pay and Lanark, Ill., has been taken under consideration by the Chicago Western District Freight Traffic Committee of the United States Railroad Administration on petition of the Chicago, Milwaukee and St. Paul Railroad. A commodity rate of $1.50 per net ton is asked.

Twin Cities Gas Company Approved

By the approval of plans of Joseph M. Berkeley to acquire the properties of the defunct Riverside County Gas and Power Company by the California State Railroad Commission, gas service in Beaumont and Banning, Cal., will now be resumed.

The new company will be known as the Twin Cities Gas Company of Riverside, Cal., with a capital stock of $25,000. It will issue $42,500 in bonds. All of the stock and $15,000 of the bonds will go to the Union National Bank of Pasadena, Cal., to release the properties. The bank will purchase the remainder of the bonds.

Largest Baking Machine in the World in Chicago

Consumes 1,000,000 Cu. Ft. of Gas per Month

The largest gas-fired baking machine in the world has been successfully installed by engineers of the Peoples Gas Light & Coke Company in the plant operated by Abraham Kaufman, 1328 South Jefferson Street, Chicago. The machine sold for $15,300 and will be used for baking matzoth. The gas consumption will average about 1,000,000 ft. a month.

The machine is 48 ft. long and 8 ft. wide with an outer layer of white glazed brick. The matzoth dough is fed in at one end and moved along by means of a conveyor system and comes out at the other end already baked and ready for packing.

"Increase Granted Counties Gas of Penna."

An increase of 10 cents per 1,000 cu. ft. of gas has become effective in Main Line communities of Philadelphia, Pa., served by the Counties Gas & Electric Company of Pennsylvania.

The rate increase applies also to Norristown, Bridgeport, Conshohocken, West Conshohocken and the surrounding districts of Pennsylvania.

The new rates are $1.20 per 1,000 cu. ft. up to the first 10,000 used. Over 10,000 cu. ft. and up to 20,000 the rate is $1.10 per 1,000 cu. ft.

The old rates called for $1.10 per 1,000 cu. ft. up to the first 10,000, decreasing 10 cents for every 10,000 ft. used.

Pennsylvania Gas Company Files New Rate Schedule

Consumers of the Pennsylvania Gas Company in Warren, Clarendon, Sheffield, Pine Grove, Erie and Corry, Pa., have received notice of a new schedule of rates that has been filed with the Public Service Commission, to go into effect Nov. 20. According to the notice, the new tariff provides a conservation plan, charging a greater rate to the greater consumption of gas, the object being to compel a more economical use of gas to the end that the supply may be made to last longer and a better service given.

The new rate does not affect the cost of the first 5,000 ft. of fuel used by the consumer. Under the new rate the second 5,000 will cost 47 cents a 1,000 and the third 5,000 will cost 52 cents per 1,000, while all over in excess of 15,000 ft. will be charged at the rate of 57 cents per 1,000 cu. ft.

30-Year Franchise Given to Ocean View, Va., Company

The Ocean View (Va.) Gas Company was given a franchise to operate a plant in that Chesapeake Bay resort and to utilize the streets for the construction of gas mains, etc., but the commission stated to E. A. Page, representative of the company, that the franchise was given with authority of the commission only so far as that privilege goes.

The franchise granted the company extends through a period of thirty years.

Peoples Company Advertises According to the Weather Man

The Peoples Gas Light & Coke Company of Chicago believes in opportune advertising. For six weeks the advertising department held back an advertisement, headed "COLDER, FOLLOWED BY RISING TEMPERATURE," waiting for the weather man to announce the opportune forecast. On the morning that the weather man's announcement came, the company's ad appeared in all of the papers. Here are some of the terse points brought out in the display:

"This is the kind of weather report you will see in the papers almost any day this time of the year.

"What are you going to do about it? Shiver it out, and be uncomfortable and unhappy waiting for warmer weather?

"Or—start the big coal eating furnace and get it going good just about the time the weather turns warm again, and make you open all the doors and windows to get the house temperature back to normal?

"Or—buy a gas heater now! And —have the heat you want when you want it and be comfortable all of the time."

Coincident with the appearance of the advertisement, the company connected up a gas heater and kept it burning on the sidewalk in front of their salesrooms, day and night.

Personal Notes

William L. Cheney, of the Blackstone Valley Gas & Electric Company, of Woonsocket, R. I., has been elected president of the company's employees' club.

Carl Riddleberger, of N. A. Moss & Co., of Detroit, Mich., and manager of the Fulton Fuel & Light Company, of Fulton, N. Y., is now manager of the gas company at Hannibal, Mo. For the past two and a half years, Mr. Riddleberger has also been manager of the gas plant at Staunton, W. Va.

Stephen Thompson, of Martinsburg, W. Va., has been made manager of the gas plant at Staunton, W. Va., to succeed Carl Riddleberger.

WILLIAM F. ISAACS, for more than fifteen years an employee of the Lawrence (Mass.) Gas Company, and foreman of outside construction work, has resigned his position and plans to take up his residence shortly among the hills of New Hampshire. His resignation took effect some time ago, but as yet his successor has not been appointed. Daniel J. DeCourcy, foreman of inside construction work, has been looking after the duties of both offices.

NOAH LAPIN, SIMON MENDELMAN AND SAM MENDEL, members of the St. Louis Gas Club, represented the St. Louis club at the Springfield, Ill., convention this week.

THE UTILITIES GOLF ASSOCIATION, comprising many prominent Chicago gas men, awarded its third prize series of the season in a tournament held at the New Evanston Golf Club. Representatives of the Commonwealth Edison Company, Chicago Telephone Company, Western Electric Company and Peoples Gas Light & Coke Company participated.

The following awards were made: A. H. Thorn, a thermos bottle, first prize; C. W. Buffington, silver buckled belt, second prize; H. E. Bates, a pair of gloves, third prize; R. B. Harper, a cane, fourth prize.

Other meets are being arranged for by the club.

Construction Notes

Steps Taken for Erection of Gas Plant

Edward L. Rieha, a well known gas engineer of Baltimore, Md., has been in the city of Orangeburg, S. C., getting data on the proposition of erecting a gas plant.

Orangeburg, S. C., is to vote on a large bond issue, in the near future, for the erection of a gas plant, bonds to be issued in the amount of $100,000. Petitions for local freeholders to sign have been prepared and the women of the city who are interested in the gas plant proposition are to carry around these petitions. The Chamber of Commerce has already endorsed the action of a bond issue for the gas plant and F. F. Malpass, president of the Chamber of Commerce, will assist in the movement.

Gas Machinery Company Gets Contract from Holyoke, Mass.

The Gas & Electric Department of the City of Holyoke, Mass., have contracted with the Gas Machinery Company, of Cleveland, Ohio, to rebuild their two water gas sets so that both sets will be equipped with all modern devices for the efficient manufacture of carbureted water gas. A new high pressure blast apparatus of proper capacity will be installed and the tar washing and extracting machinery recently furnished by the same company is now in operation.

Galesburg, Ill., Company Installing $100,000 Water Gas Set

Construction work has started at the plant of the Galesburg, Ill., Gas Company. The foundation is well under way for the building that will contain the new water gas set which the company put in immediately and which will cost in the neighborhood of $90,000 to $100,000 and which will be one of the largest improvements in that city of the year. According to Superintendent Carloy the company is forced to make this improvement because of the great difficulty in getting good gas coal and unreliability of the supply. For two years the company has been put to great straits to get coal and the outlook that this fuel can be procured is not at all good for the coming year.

The company has purchased at Cleveland, O., an 8-foot water set, but is making the foundation duplicates that if circumstances require it all will be in readiness for the insertion of another set. The set will have a capacity of 1,200,000 cu. ft. of gas each 24 hours. The building is to be a modern fireproof structure 50 by 35 ft. two stories in height. The materials will be of brick, steel and concrete.

$55,000 Gas Plant for Avalon, Catalina Island

The city of Avalon, Cal., on Catalina Island, will soon begin construction of a new gas plant to cost $55,000

A first payment of $77,525 for the gas plant and other improvements, out of a bond issue of $143,000, recently voted, has been made to the Catalina Island Company by the municipality for public utilities owned by the company.

Kinston, N. C., Will Erect Gas Plant

A gas plant ordinance has been passed by the city council of Kinston, N. C.

The city will issue bonds to pay for the plant, which will cost from $75,000 to $125,000. After bids are advertised for and other preparations made, it will take four or five months to put the plant in operation, it is estimated. Construction may be started by Nov. 1.

Texas Company Expending $30,000 on Extensions

J. W. Dawley, manager of the Abilene (Texas) Gas & Electric Company, announces that the company will spend $30,000 in extending the company's gas mains in this city in order to equalize the pressure.

The work will begin at once, one carload of pipe being on hand now. All outlying districts of the city will, when the new system is completed, get the same gas service as other portions of the city.

Arkansas Natural Will Make Improvements

The Arkansas Corporation Commission has issued an order requiring many improvements and changes in the service line of the Arkansas Natural Gas Company, which supplies gas to the Little Rock Gas & Fuel Company for distribution in Little Rock and North Little Rock.

Improvements required of the Arkansas Natural Gas Company follow:

To put in at least 1,500 ft. of 8-in. screw-jointed pipe, each end to be connected back of the present master-gate valves for this crossing. This line to be anchored down thoroughly and river weights used in crossing the river.

To thoroughly anchor both ends of the main line or lines and auxiliary line through the Sulphur River bottoms that are subject to overflow.

To provide and keep ready for use at Fort Lynn, Miller County, sufficient sheet piling for the erection of at least two coffer dams.

To provide permanently anchored elevated stands, together with long-handled wrenches for manipulating the master auxiliary valves on either side of the crossing.